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C H A P T E R 5

THE SENSUAL AND PERCEPTUAL THEORIES OF VISUAL COMMUNICATION

*There can be no words
without images.*

Aristotle, 384–322 B.C.E.

PHILOSOPHER, SCIENTIST,

AND EDUCATOR

By the end of this chapter you should know:

- The difference between visual sensation and visual perception.
- The various components and uses for gestalt, constructivism, semiotics, and cognitive theories of visual communication.
- Why the perceptual theories offer a higher understanding of visual messages than the sensual theories.

Psychologists, philosophers, and practitioners have devised several approaches that help explain the way we see and process images. Knowing the four visual attributes the brain responds to—color, form, depth, and movement—is only part of the story for the visual communicator. The four theories we discuss in this chapter can be divided into two fundamental groups: sensual and perceptual. Those who advocate the sensual theories (gestalt and constructivism) maintain that direct or mediated images are composed of light objects that attract or repel us. The perceptual theories (semiotics and cognitive) are concerned mainly with the

meaning that humans associate with the images they see.

To understand any of these approaches to visual communication, you must first know the difference between visual sensation and visual perception. A visual sensation simply is a stimulus from the outside world that activates nerve cells within your sense organs. Wood burning in a fireplace activates the cells in your ears because you can hear the logs cracking and hissing; in your nose because you can smell the rich aroma of the wood; in your hands and face because you can feel the warmth of the fire; and in your eyes as you watch the hypnotiz-

ing glow of the yellow flames. Sensations are lower order, physical responses to stimuli and alone convey no meaning. Nerve cells in your ears, nose, hands, and eyes do not have the capacity to make intelligent thoughts. They are simply conveyors of information to the brain.

When stimuli reach the brain, it can make sense of all the sensual input. Conclusions based on those data are almost instantaneous. Your brain interprets the noises, smells, temperatures, and sights as a fire in a fireplace. Visual perception is the conclusion that is made by combining all of the information gathered by your sensual organs. Sensations are the raw data. Visual perception is the meaning concluded after visual sensual stimuli are received.

■ SENSUAL THEORIES OF VISUAL COMMUNICATION

■ *Gestalt*

The gestalt theory of visual perception emerged from a simple observation. German psychologist Max Wertheimer received his inspiration during a train trip in the summer of 1910. Wertheimer happened to look out the window as the train moved through the sunny German countryside. He suddenly realized that he could see the outside scene even though the opaque wall of the train and the window frame partially blocked his view. He left the train in Frankfurt, went to a toy store, and bought a popular children's toy of the day—a stroboscope or flipbook. The flipbook is a simple form of cartoon animation. On the first page of the book, a drawing, say, of a cartoon character in a running position is displayed on the left-hand side of the page. On each subsequent page, the drawing of the figure is to the right of the previous drawing until the last page shows the character at the

right-hand side of the page. To see the effect of the character running from the left to the right side, the viewer simply flips the pages rapidly. Wertheimer's observations during the train trip and using the flipbook led to a famous laboratory experiment at the University of Frankfurt.

Wertheimer concluded that the eye merely takes in all the visual stimuli and that the brain arranges the sensations into a coherent image. Without a brain that links individual sensual elements, the phenomenon of movement would not take place. His ideas led to the famous statement:

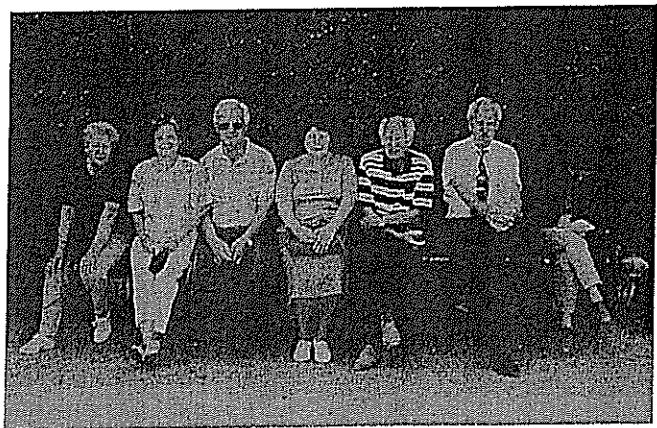
The whole is different from the sum of its parts.

In other words, perception is a result of a combination of sensations and not of individual sensual elements.

The word *gestalt* comes from the German noun that means form or shape. Gestalt psychologists further refined the initial work by Wertheimer to conclude that visual perception was a result of organizing sensual elements or forms into various groups. Discrete elements within a scene are combined and understood by the brain through a series of four fundamental principles of grouping that are often called laws: similarity, proximity, continuation, and common fate.

Similarity states that, given a choice by the brain, you will select the simplest and most stable form to concentrate on. This principle stresses the importance of basic shapes in the form of squares, circles, and triangles (Figure 5.1).

Proximity states that the brain more closely associates objects close to each other than it does two objects that are far apart. Two friends standing close and holding hands will be viewed as being more closely related than a third person standing twenty yards from the couple (Figure 5.2):



Paul Merin Lester



Paul Merin Lester

Continuation rests on the principle, again assumed by gestalt psychologists, that the brain does not prefer sudden or unusual changes in the movement of a line. In other words, the brain seeks as much as possible a smooth continuation of a line (Figure 5.3). The *line* can be a line in the traditional sense of the word, as in a drawing, or several objects placed together that form a line. Objects viewed as belonging to a continuous line will be mentally separated from other objects that are not a part of that line. Continuation also refers to objects that are partially blocked by a foreground object (Figure 5.4).

Another principle of gestalt psychology is common fate. A viewer mentally groups five arrows or five raised hands pointing to the sky because they all point in the same direction. An arrow or a hand pointed in the opposite direction will create tension, because the viewer will not see it as part of the upwardly directed whole (Figure 5.5).

One of the first uses of the gestalt principles was to explain the phenomenon of reversible figure and ground spatial patterns (in painting and photography, called negative and positive space). For figure and ground patterns the crucial question was: How do we know what is in the foreground and what belongs in the background of an

image? This question is related directly to the important need of the brain to label objects as near or far in order to judge their relative importance or danger.

In 1915, Edgar Rubin, a Danish gestalt psychologist, experimented with figure and ground patterns by drawing an object that could be interpreted as either a face or vase (Figure 5.6). Sensually, both the face and the vase images are stimulating photoreceptors in the retina. However, the brain cannot see both images at once—you must make a conscious decision whether to see a face or a vase in the drawing.

Rubin also outlined the principle of camouflage in which there is little or no separation between the foreground and the background (Figure 5.7). Understanding and manipulating this trait of visual perception led directly to military applications of merging the colors of uniforms and equipment with those of surrounding backgrounds in order to hide them. This principle also influenced the work of artists M. C. Escher and Paul Klee, both of whom were influenced by the writings and findings of several gestalt psychologists.

Gestalt and Visual Communication

The strength of the gestalt theory of visual perception is its attention to the

Figure 5.1 (left)

Similarity. Six tourists who rest on a bench at Versailles outside Paris come from a similar cultural group and are linked together in our minds. Because the woman to the right reads a book and is from a different generation, she looks as if she does not belong, or is dissimilar.

Figure 5.2 (right)

Proximity. Three boys dressed in similar Mardi Gras costumes, but with dissimilar personalities, wait to be photographed with the queen of a ball in New Orleans. One of the reasons the brain links the boys as a single unit is because they are sitting so close together.

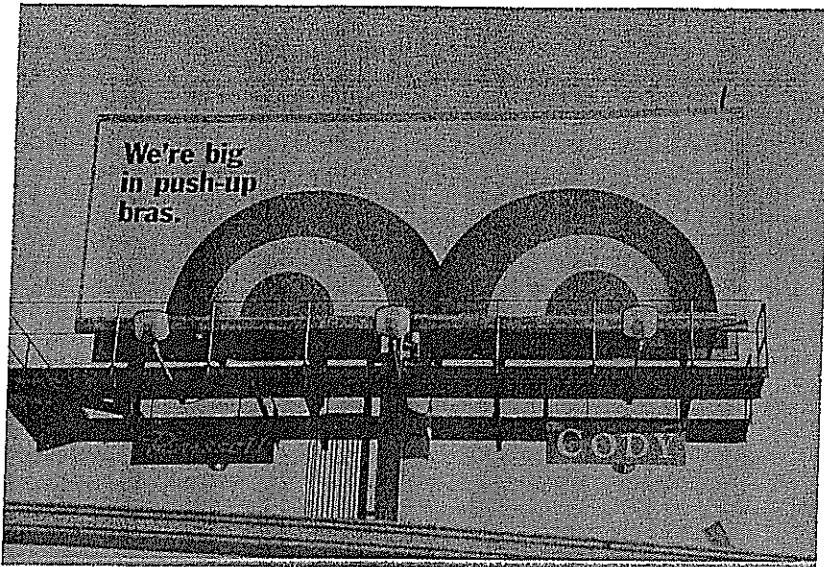


Figure 5.3

Continuation. A billboard for a Target department store in Adelaide, Australia demonstrates continuation as you continue the circles that make up the store's logo in your mind. This image also demonstrates that non-American advertisers can get away with more than American marketers.

individual forms that make up a picture's content. Any analysis of an image should start by concentrating on those forms that naturally appear in any picture. Recall that color, form, depth, and movement all are basic characteristics of an image that the brain notices. Gestalt teaches a visual communicator to combine those basic elements into a meaningful whole. The approach also teaches the graphic artist to focus attention on certain elements by playing against the gestalt principles. For example, a company's logo (or trademark) will be noticed in an advertisement if it has a dissimilar shape, size, or location in relation to the other elements in the layout.

The work of gestalt theorists clearly shows that the brain is a powerful organ that classifies visual material in discrete groups. What we see when looking at a picture is modified by what we have seen in the past and what we want to see (Figure 5.8).

Constructivism

The gestalt approach had been criticized for describing perceptions rather than giving

explanations of how these perceptions actually give meaning to an image. Consequently, several gestalt psychologists attempted to develop theories that helped explain the importance of the viewer's own mental state during active viewing.

In 1970, Julian Hochberg, a professor of psychology at Columbia University, found that the eyes of observers are constantly in motion as they scan an image. These quick focal fixations all combine within the viewer's short-term memory to help build a mental picture of a scene. The viewer constructs the scene with short-lived eye fixations that the mind combines into a whole picture. For Hochberg, the gestalt approach described a viewer as being too passive. In contrast, constructivism emphasizes the viewer's eye movements in an active state of perception.

Hochberg had his subjects use eye-tracking machines in his visual perception experiments. These devices can chart the way a viewer looks at an image. Because the fovea region of the eye is a tiny area, the eye constantly moves in order to maintain focus (Chapter 3). Eye-tracking machines simply made obvious the eyes' frenetic journey across a direct or mediated image.

Dr. Mario Garcia and Dr. Pegie Stark of the Poynter Institute in St. Petersburg, Florida, used an Eye-Trac testing machine to record on videotape the eye movements of participants as they read different versions of a newspaper. The researchers found that the content, size, and placement of photos on a newspaper page are more important than whether the image is printed in color.

Communications researcher Sheree Josephson of Weber State University, Utah, uses an eye-tracking device to record the eye movements of those viewing Web sites in order to gain insights into human physiology, psychology, and graphic design. In one study

she had students make presidential choices with the controversial "butterfly" ballots of Palm Beach County, Florida, that were used during the 2000 presidential election. It was estimated that Vice President Al Gore may have lost at least 13,000 votes because of the confusing design. Josephson's analysis of eye-tracking results indicated that the ballot design did cause confusion (Figure 5.9).

Impossible objects are a good example of how constructivists analyze visual works (Figure 5.10). When first viewed, the drawing looks like an object with three horizontal poles. But when the mind attempts to assemble all the parts, it concludes that such an object would be difficult to reproduce in the real world.

Although vital in helping to explain the reason for the eyes' constant travels across an image, constructivism actually is only a minor clarification of the gestalt approach. The reason is that the link between the numerous eye fixations and past experiences locked within a person's memory in helping to explain a picture is never made clear.

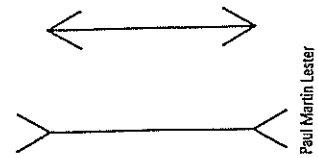
■ **PERCEPTUAL THEORIES OF VISUAL COMMUNICATION**

The semiotics and cognitive approaches to visual perception may be considered content-driven or perceptual theories. Although recognizing that vision cannot happen without light illuminating, structuring, and sometimes creating perceptions, these three approaches stress that humans are unique in the animal kingdom because they assign complex meaning to the objects that they see.

■ **Semiotics**

The flag that is raised high above a football stadium and is watched reverently during

the singing of the national anthem by those in the stands and on the field is a sign. The right hand placed over the approximate location of the heart during the singing of the anthem is a sign. The words printed in the program about the football players on the field are signs. The close-up photographs of players crouched and awaiting the snap of the ball during the game are signs. The officials' striped uniforms and their hand signals indicating penalties are signs. The illuminated numbers on the scoreboard are signs. Even the cleat marks in the sod after a running back's score are signs. The "high-five" slap with a friend after a team's touchdown is a sign. The simple silhouette drawing of a man above the men's room door is a sign. The green traffic light as you make your way home from the game is a sign (Figure 5.11).



Paul Martin Lester

Figure 5.4
One of the most well known optical illusions is called the Muller-Lyer illusion. Two lines of equal length appear to be different lengths because of the addition of outward and inward arrows. The gestalt principle of continuation may help explain the effect. The brain naturally extends the length of the second line because the outward arrows continue the horizontal direction.

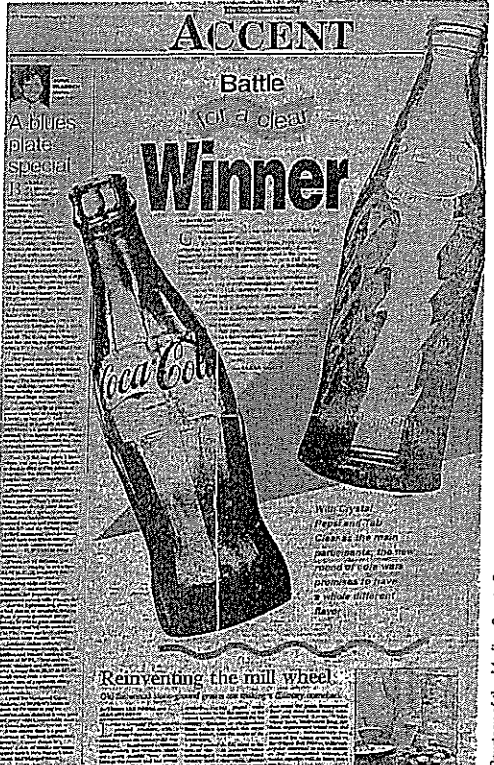
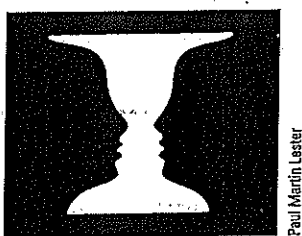


Figure 5.5 (left)
Common fate. Besides their similar shapes, the two cola bottles are linked graphically by their upward direction.

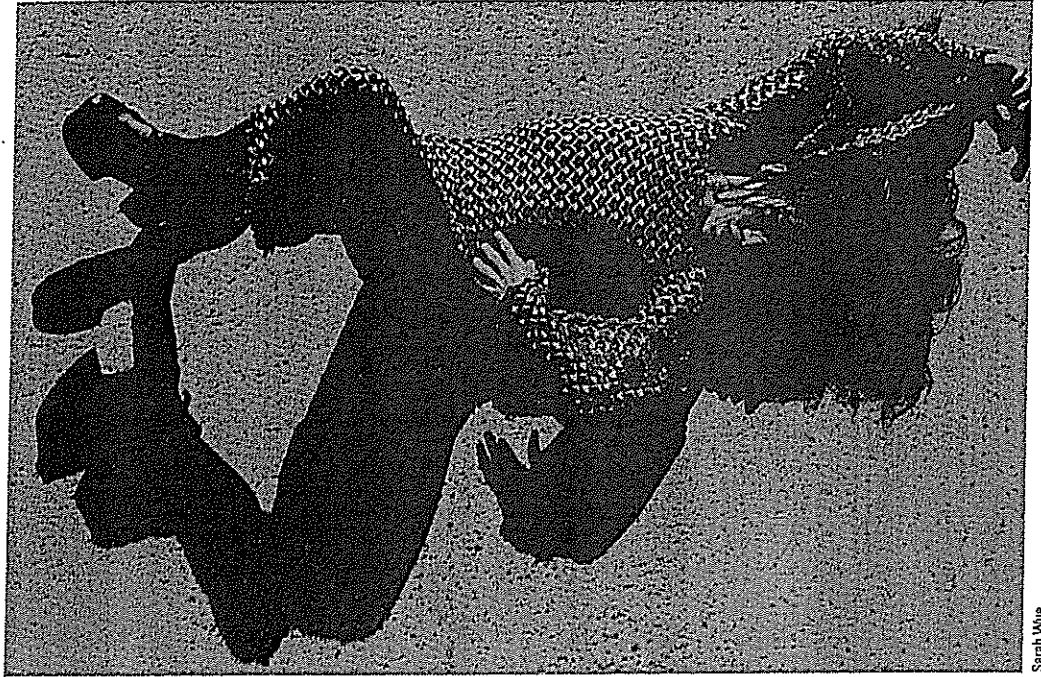
Figure 5.6 (below)
As you concentrate on the white area of a variation of the popular Peter and Paul Goblet illusion, the cup becomes the foreground figure. Stare at the black shapes and the faces will appear.



Paul Martin Lester

Figure 5.7

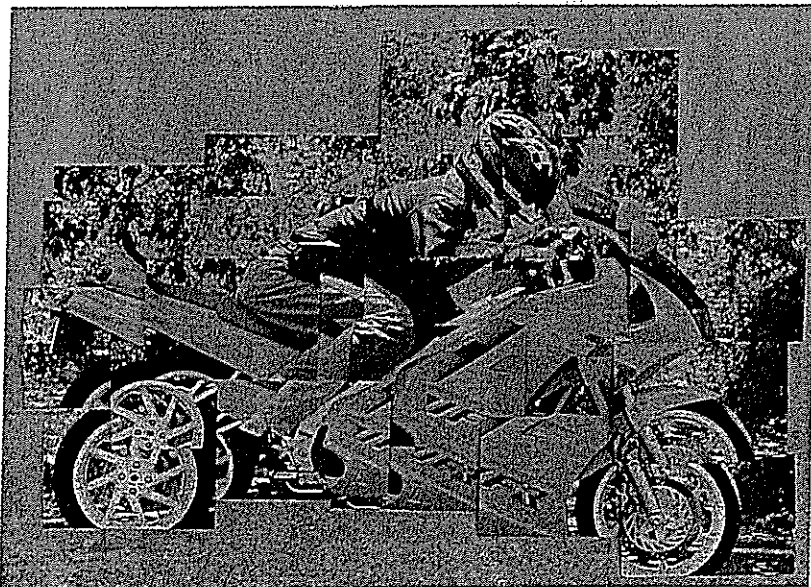
Edgar Rubin used the gestalt principles to draw conclusions about how foregrounds and backgrounds are identified—leading to camouflage clothing. In this photograph, the symmetrical shape, the curved form, the familiar subject, and the vertical orientation help identify the model and not the shadow as the foreground (or positive) shape.



Sarah Wie

Figure 5.8

The gestalt approach maintains that the “whole is different from the sum of its parts.” This advertising photograph, which uses a montage effect to create excitement in the viewer’s mind about the motorcycle, demonstrates that philosophy. A single image would be difficult for a viewer to interpret, but taken as a whole, the meaning is clear.



Kevin Keithley

A sign is simply anything that stands for something else. After reading the preceding list of signs you might well ask: What is *not* a sign? That is a good question because almost any action, object, or image will mean something to someone somewhere. Any physical

representation, from a gesture to an orange jacket, is a sign if it has meaning beyond the object itself. Consequently, the meaning behind any sign must be learned. In other words, for something to be a sign, the viewer must understand its meaning. If you do not understand the meaning behind the orange color of a jacket, it isn't a sign for you.

Semiotics (called semiology in Europe) is the study or science of signs. Actually, it is the culmination of Aldous Huxley's anthem: The more you know, the more you see. Thus, images will be much more interesting and memorable if signs that are understood by many are used in a picture. The study of semiotics is vital because signs permeate every message. The academic study of semiotics attempts to identify and explain the signs used by every society in the world.

Although semiotics has gained popularity only recently, it is an old concept. In 397 C.E., Augustine, the Roman philosopher and linguist, first proposed the study of signs. He recognized that universally understood enti-

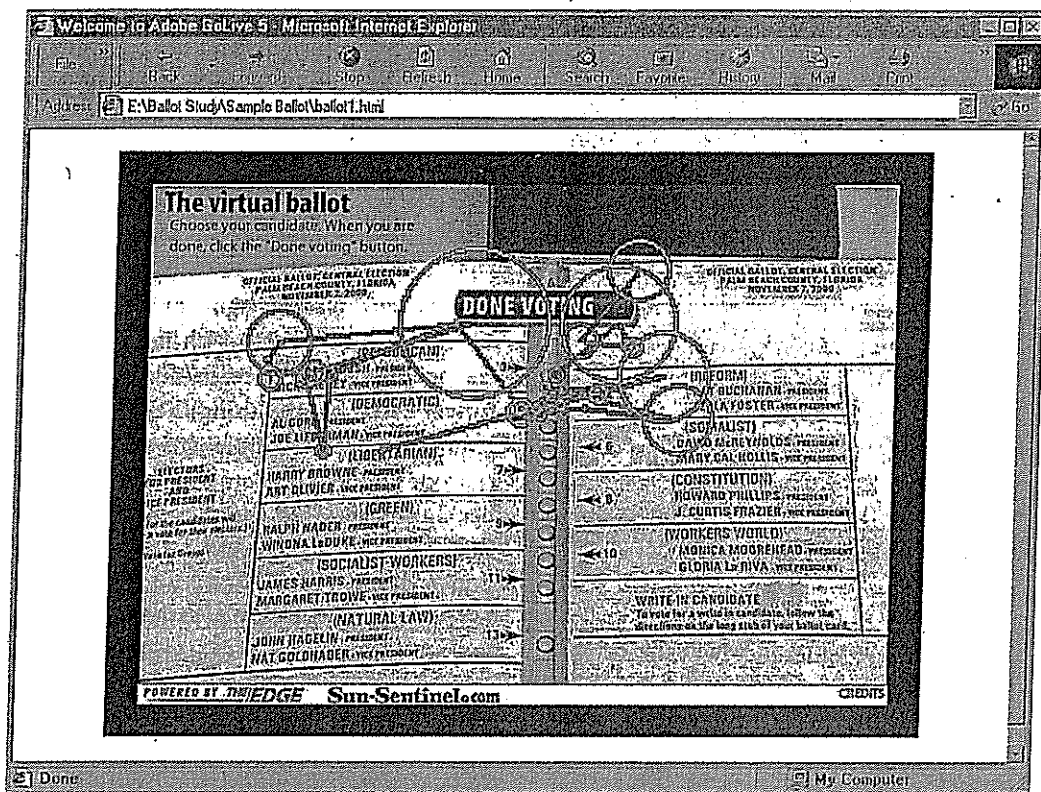


Figure 5.9
Using eye-tracking technology to study the eyes' path over Palm Beach County's "butterfly" ballot, researcher Sheree Josephson was able to determine by the location and size of circles (indicating the time of eye fixations) and lines (representing the eyes' path) that this subject "who was told to vote for Gore fixated frequently on the punch holes, indicating some level of confusion."

Courtesy South Florida Sun Sentinel

ties afforded communication on many non-verbal levels. For Augustine, signs were the link between nature and culture. The word *semiotics* comes from the language of his country: *Semeion* is the Greek word for sign.

Contemporary semiotics emerged through the work of two linguistic theorists just before World War I. Swiss linguist Ferdinand de Saussure developed a general theory of signs that was taken from notes by his students while he was a professor at the University of Geneva. At about the same time, American philosopher Charles Sanders Peirce published his own ideas about the effect of signs on society. These two philosophers inspired others to concentrate in this field of study. The Americans Arthur Asa Berger, Charles Morris, and Thomas Sebeok, the Italian Umberto Eco, the Frenchman Roland Barthes, and many others have contributed greatly to the study of semiotics.

Acceptance of Semiotics

Peirce and de Saussure weren't particularly interested in the visual aspects of signs. They were traditional linguists who studied the way words are used to communicate meaning through narrative structures. However, over the years semiotics has evolved into a theory of perception that involves the use of images in unexpected ways. For example, Sebeok identified some of the topics that semiotics researchers have studied. Besides the obvious subject of visual signs and symbols used in graphic design, they include the semiotics of the theater, where performance elements are analyzed; the



Modified after Carolyn Bloomer, *Principles of Visual Perception*. Design Press, 1990

Figure 5.10
Because the eyes do not have to scan a smaller image as much as a larger one, determining that the illustration at the right is an impossible object is easy. This conclusion is a result of Julian Hochberg's eye-fixation research.

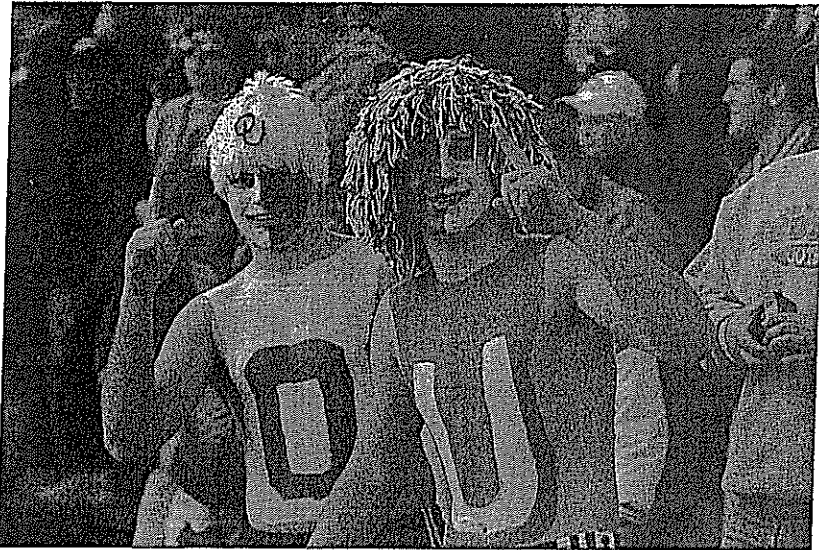


Figure 5.11

Examples of symbolic signs are easily spotted during a football game. Students from the University of Oklahoma support their team by painting their faces red and white.

semiotics of puppetry, in which the colors, costumes, gestures, and staging of the characters are studied; the semiotics of television and commercials; the semiotics of tourism; the semiotics of the signs used in Boy Scout uniforms and rituals; the semiotics of notational systems used in dance, music, logic, mathematics, and chemistry; and urban semiotics, in which cities are seen as social symbols. The field has become so popular that journals, international conferences, and academic departments at universities now are devoted to semiotics.

Three Types of Signs

Peirce's contribution to semiotics was in the formulation of three different types of signs: iconic, indexical, and symbolic. All signs must be learned, but the speed of comprehension of each type of sign varies.

Thinking about iconic, indexical, and symbolic signs is a way to really look and study a visual message in a much more thorough and critical way. Once this process is done, you soon realize that even the simplest image has complex cultural meaning. However, it is important to realize that the three

categories of signs—iconic, indexical, and symbolic—are not mutually exclusive. The written and visual examples given in this section are meant to focus your attention on one particular type of sign. Realize that any picture often has all three types represented at the same time.

Iconic Signs Iconic signs, or icons, from the Greek word *eikon*, which means image, are the easiest to interpret because they most closely resemble the thing they represent. Icons can be the simple drawings above restroom doors that communicate the gender allowed inside, the trashcan and "Recycle Bin" images on the desktops of many computers that mean to discard unwanted files, many street signs that clearly indicate a dangerous road condition, and the most common of all—photographs and motion pictures (Figure 5.12).

Indexical Signs Indexical signs have a logical, commonsense connection to the thing or idea they represent rather than a direct resemblance to the object (Figure 5.13). Consequently, their interpretation takes a little longer than that of icons. We learn indexical signs through everyday life experiences (Figure 5.14). Peirce used a sundial as an illustration of indexical signs. Other indexical signs can be a footprint on the beach or on the surface of the moon, smoke spewing out of a high smokestack or automobile exhaust pipe, and even the finding of fever in a sick patient. Footprints stand for the person who impressed them. Smoke represents the pollution generated by the furnace or engine. Fever indicates that the patient has an infection (Figure 5.15).

Symbolic Signs The third type of sign is the most abstract. Symbols have no logical or representational connection between them and the thing they represent. Symbols,

more than the other types of signs, have to be taught (Figure 5.16). For that reason, social and cultural considerations influence them greatly. Words, numbers, colors, gestures, flags, costumes, most company logos, music, and religious images all are considered symbols (Figure 5.17). Because symbols often have deep roots in the culture of a particular group, with their meanings being passed from one generation to the next, symbolic signs usually evoke a stronger emotional response from viewers than do iconic or indexical signs (Figure 5.18).

Images—A Collection of Signs

Roland Barthes described the *chain of associations* or signs that make up a picture's narrative. In verbal language the narrative is linear. One word follows the next in a specific rule-based order. In that regard, verbal communication is considered discursive. Pictures, on the other hand, are presentational. Signs within an image are presented in various ways, many times depending on the style of the image-maker. Although the chain of signs is more tightly controlled with text than with images, one exception might be poetry, in which the order of the words can have nonlinear, presentation qualities. In fact, the Greek poet Simonides in about 500 B.C.E. wrote that paintings were "silent poetry and poetry painting that speaks."

The common term for Barthes's chain of associations is *codes*. Through its history and customs, a society develops a complex system of codes. Individual signs are thus combined to communicate complicated ideas in the form of these codes. Asa Berger suggests four types of codes: **metonymic**, **analogical**, **displaced**, and **condensed**.

A metonymic code is a collection of signs that cause the viewer to make associations or assumptions. A photograph in an advertisement that shows the signs of a living room



Arthur Rothenstein, the Library of Congress

with expensive paintings on the walls, real wood paneling, richly upholstered furniture, subdued lighting, and a fire glowing under a mantle would communicate metonymically the prospect of romance or comfort for upper-class residents.

An analogical code is a group of signs that cause the viewer to make mental comparisons. Yellow writing paper might remind the author of the yellow peel of a lemon because of its similar color.

Displaced codes are those that transfer meaning from one set of signs to another. In the movie *Dr. Strangelove* (directed by Stanley Kubrick), rifles, missiles, airplanes, and other phallic shapes were photographed purposely to communicate the idea of sexual tension among certain military characters (Figure 5.19). Images of penises are not acceptable pictures for most members of society and so are displaced by other symbolism. Liquor, lipstick, and cigarette advertisers also commonly use phallic imagery in the form of their products' shapes in the hope that potential customers will link the use of their products with possible sexual conquest.

Figure 5.12

The image is an iconic sign because it represents what was in front of a camera's lens, but the cracked earth and bleached skull are indexical signs that mean the land has been without water for some time. The long shadow also is an indexical sign showing how low the sun is to the horizon. Furthermore, a cow's skull symbolizes the dire weather conditions experienced by many farmers during severe droughts in U.S. history.

Figure 5.13

This nineteenth-century line drawing presents good examples of an indexical sign. There are two possible sources for the smoke—a steam engine on the horse-drawn fire engine and a fire inside the house. But is there a blaze on the fire engine, and is the man at the window simply smoking a (rather large) cigar? Experience helps us decipher indexical signs. But as with all images, there are other signs to analyze. The photographic quality of the image makes it an iconic sign while the buildings, clothing, and horses are symbolic signs of an earlier age.



Uncensored Situations, 1966, The Dick Surpren Studio, Inc.

Finally, condensed codes are several signs that combine to form a new, composite sign. Televised music videos and the advertisements inspired by them have unique and often unexpected meanings. The signs of musicians, dancers, music, quick editing techniques, graphics, colors, multiple images, and the like all form a complex message. Within the culture the message is intended for, the condensed code has relevant meaning. But for those outside that culture, the images often are confusing, random, and without purpose. The way individuals combine signs and form their own meaningful messages often cannot be controlled by the creators of the signs. This type of code is the most promising for a new mode of communication and is where most research in semiotics needs to take place.

Symbols often evoke strong emotional responses among viewers. The burning of a country's national flag as a protest gesture is a powerful symbol of defiance and anger. It isn't simply an act to create heat through the burning of a piece of fabric. Semiotics teaches the importance of symbolism in the act of visual perception and communication. A viewer who knows the meaning

behind the signs used in a complex picture will gain insights from it, making the image more memorable. The danger of using complex signs as a part of an image is that they may be misunderstood, ignored, or interpreted in the wrong way. Nevertheless, the challenge for visual communicators, expressed in the study of semiotics, is that, when used correctly, signs can offer modes of communication previously unknown.

■ Cognitive

According to the cognitive approach, a viewer does not simply witness a light-structured object as in the gestalt theory, but actively arrives at a conclusion about the perception through mental operations.

Carolyn Bloomer identifies several mental activities that can affect visual perception: memory, projection, expectation, selectivity, habituation, salience, dissonance, culture, and words.

Memory

Arguably the most important mental activity involved in accurate visual perception, memory is our link with all the images we have ever seen. People have long used pictures as memory aids, or mnemonics, to help themselves recall certain events or long verbal passages. Simonides invented the first mnemonic system. While giving a performance of one of his lyrical poems at the home of a friend in about 500 B.C.E., he was called out of the room. Suddenly, the ceiling of the room he had just exited collapsed and killed several of the guests. Later, anxious relatives of the victims asked him the fate of their loved ones. Simonides was able to recall those who had been crushed by the stone roof by mentally re-creating the seating arrangement for those around the dinner table. This tragic experience led him to

experiment with this form of mental exercise. He found that he could memorize long passages of his writings by dividing them into sections and mentally placing them within various rooms of an imagined house.

Modern-day mnemonic experts use absurd pictures to help people recall names, complex words, and important facts. For example, an image of a young girl sipping a soda through a thirty-foot straw might be a mnemonic for the state of Mississippi. Although many researchers do not actively study mnemonic systems, medical students regularly use them in trying to remember the many complicated medical terms they encounter in their studies.

Projection

Creative individuals see recognizable forms in the cornflakes floating in a bowl of milk in the morning. Others make sense out of cloud, tree, and rock formations or find comfort in the messages learned from tarot cards, astrological signs, and the I-Ching (Figure 5.20). One reason that psychologists use the common Rorschach inkblot test is that individuals often reveal personality traits by deriving meaning from the oddly formed shapes. A person's mental state of mind is thus "projected" onto an inanimate object or generalized statement. One person will walk past a tree trunk without the slightest hesitation. Another person will spend hours marveling at the humanlike face formed by the curves and shadows in the wood. The difference between the two individuals may be in the mental processes that affect what they see.

Expectation

When you walk into a living room, you may expect to see a couch, pictures on the wall, and perhaps a television set. If you have

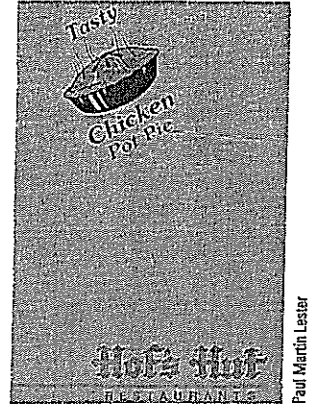
a strong mental picture of what should constitute a living room setting, you may fail to notice the typewriter that sits on a nearby card table. Having preconceived expectations about how a scene should appear often leads to false or missed visual perceptions (Figure 5.21).

Selectivity

Most of what people see within a complicated visual experience is not part of conscious processing. For example, rarely do people think about their own breathing unless consciously made aware of the process. Most of visual perception is an unconscious, automatic act by which large numbers of images enter and leave the mind without being processed. The mind focuses only on significant details within a scene. If you are trying to locate a friend sitting in the packed bleachers during a baseball game, all the other unknown faces in the crowd will have little significance. When you see your friend, your mind suddenly locks on that known appearance as if with the help of a spotlight in a darkened room.

Habituation

To protect itself from overstimulation and unnecessary pictures, as with selectivity, the mind tends to ignore visual stimuli that are a part of a person's everyday, habitual activities. When you walk or drive to school or work the same way every day, your brain doesn't really notice the sights along your route. People like to travel to new areas because the images experienced in an unfamiliar place often are striking and interesting. However, overstimulation, particularly if a culture is much different from the one left, can result in a phenomenon called culture shock. A person may grow irritable and tired if presented with too many visual sensations for the brain to filter.



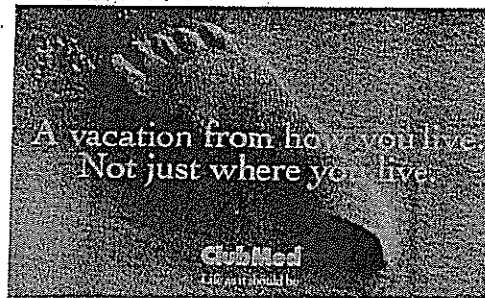
Paul Martin Lester

Figure 5.14

A restaurant's napkin contains many signs. The lines emitting from the chicken pot pie illustration do not represent strings for a marionette (as my daughter when she was four years old assumed), but steam rising from the freshly baked entrée—indexical signs indicating a hot, fresh meal. However, the steam is represented by vertical wavy lines, which we learn are symbols for freshness and heat. In addition, the picture of the pot pie itself is iconic while the words and typography used on the napkin are symbolic signs.

Figure 5.15 (top left)

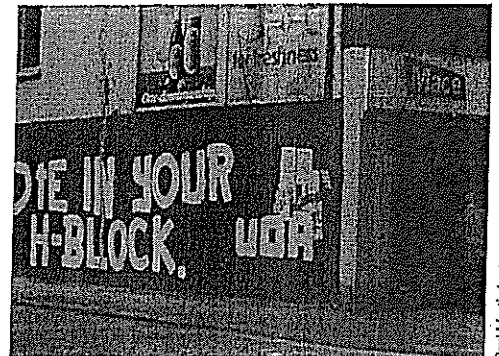
This billboard advertisement displays a clear example of an indexical sign—a footprint in the sand is a sign that a human has walked on the beach.



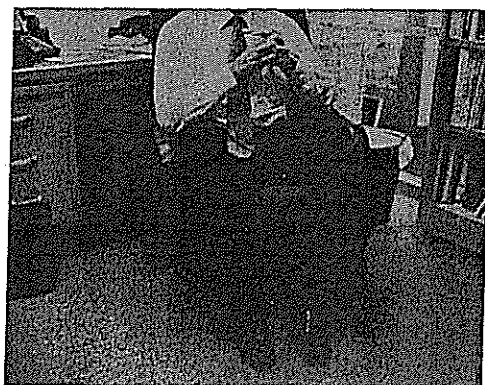
Paul Martin Lester

Figure 5.16 (top right)

In Belfast, Northern Ireland, the UDA is the Ulster Defense Association, an ultraconservative paramilitary organization. The sans serif typeface urges the Irish hunger strikers in 1981 to starve themselves in the prison wing known as "H-Block." The cross used for the "I" in "DIE" is an ironic religious symbol when it is associated with this violent message.



Paul Martin Lester



Paul Martin Lester



Paul Martin Lester

Figure 5.17 (bottom left)

Clasped hands symbolize prayer or contemplation in many cultures. The unusually tight cropping of the top of the image emphasizes the importance of the gesture by a doctor who treats young patients who have been paralyzed by gunshots.

Figure 5.18 (bottom right)

A black cloth over the head of a person symbolizes death in many cultures. In reality, this man is avoiding the sun on the boardwalk of Atlantic City.

Generally, we are ambivalent about visual stimulation. On the one hand, we enjoy new experiences. On the other hand, we do not enjoy too many of them. One way to prevent your mind from thinking habitually is to search constantly for new ways to think about familiar objects or events. Practicing creative thought readies your mind to think actively about new images when you see them.

Saliency

A stimulus will be noticed more if it has meaning for the individual. If you recently met someone you like whose favorite food is from India, whenever you smell curry or hear other people talking about the country, you will be reminded of that person. A person who is hungry will notice the smells of cooking food emanating from an open window. A trained biologist will see more in a slide under a microscope than the average

person will; both individuals see all there is to see under the microscope, but what the biologist sees is consciously processed in the mind. Shapes and colors have more meaning for an artist.

Dissonance

Trying to read with a television or stereo loudly playing in the same room is difficult because the mind really can concentrate on only one activity or the other. A book is set aside the moment a television program or the lyrics of a song become interesting. As with Rubin's face or vase drawing, concentration is limited to one activity at a time. Television programs that combine written and spoken words, multiple images, and music run the risk of creating visual messages that the viewer cannot understand because of all the competing formats.

A classic example of dissonance comes from the cable network CNN, which intro-

duced in August 2001 its new version of the 1982 staple, "Headline News." Television critics across the country voiced their negative opinion about the new format because of all the competing bits of information—an anchorperson talking on camera or as a voice-over, still and/or moving images, graphics with headlines, stock details, weather reports, and advertising logos, all within the confines of the television screen (Figure 5.22). However, many viewers have praised what has been called a "newer, hipper look."

In addition, if a room is too warm or too cold, if someone is speaking to you, or if there is a personal matter that you cannot stop thinking about, you will find it difficult to concentrate on a visual message.

Culture

As a manifestation of the way people act, talk, dress, eat, drink, behave socially, and practice their religious beliefs, cultural influences have a tremendous impact on visual perception. Religious icons, state and country flags, T-shirt designs, and hairstyles all have individual and cultural meanings. If you are aware of the signs that are a part of a particular culture (such as those presented in the section on semiotics) you also will comprehend some of the underlying reasons behind their use. Culture isn't simply the concept of a country's borders or the idea of high-class or upper-class "culture." Culture spans ethnicity, economic situation, place of work, gender, age, sexual orientation, physical disability, geographic location, and many other aspects of a person's life. Culture also determines the importance of the signs that affect people who live in that culture.

Words

Although we see with our eyes, for the most part our conscious thoughts are

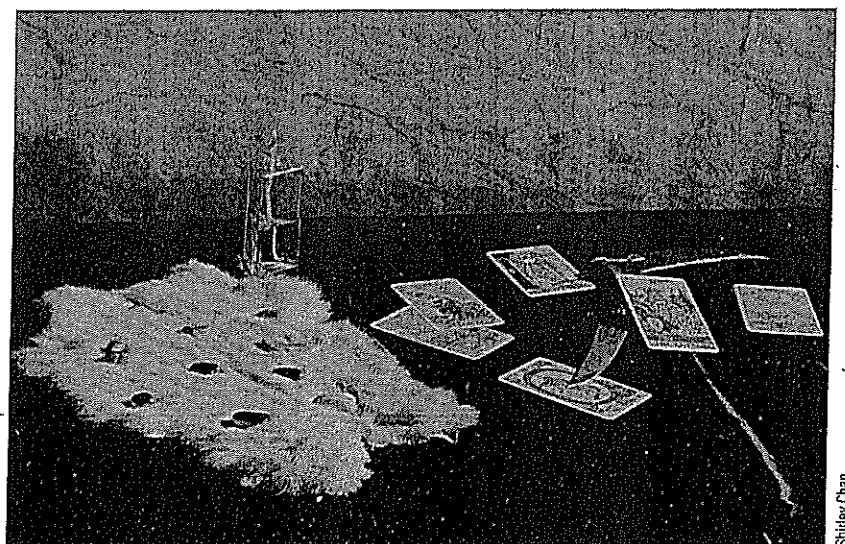


Figure 5.19

Stanley Kubrick's *Dr. Strangelove, Or How I Learned to Stop Worrying and Love the Bomb* is a classic study of the displaced code. The missile that actor Slim Pickens rides to his doom at the end of the movie is the ultimate phallic symbol. In this publicity still, Pickens poses on the nuclear warhead prop.

Figure 5.20

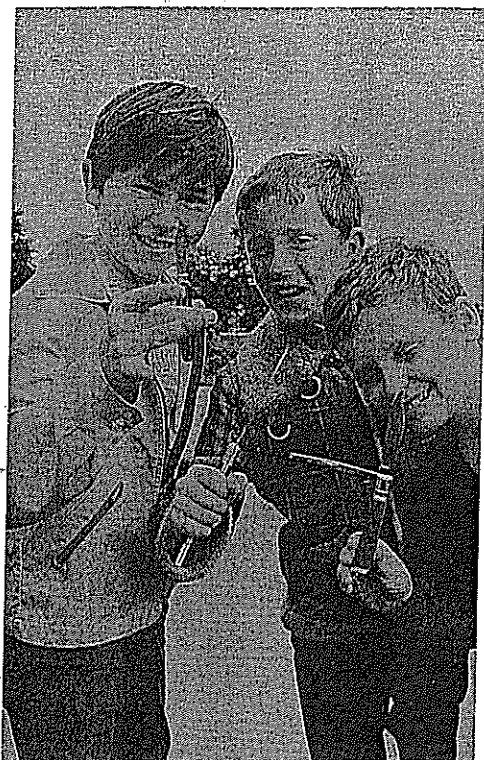
Tarot cards are an example of the mental activity known as projection. They are one of the many symbol systems that people use to help them discover traits about their personalities or look into the future. After the illustrated cards are shuffled, a reader familiar with their symbolism explains their meaning.



Shirley Chan

Figure 5.21

Expectation is a mental condition that leads to poor visual perception. A casual viewer would most likely overlook a photograph of boys mugging for the camera. However, the viewer's attention is drawn to the image when these Belfast boys proudly display their hidden knives. Suddenly, the viewer is shocked out of an expected scene.



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framed as words. Consequently, words, like memory skills and culture, profoundly affect our understanding and subsequent long-term recall of a direct or mediated image. One of the strongest forms of communication is when words and images are combined in equal proportions.

■ *Clear Seeing Is a Human Activity*

Semiotics and cognitive approaches to visual communication state that the human mind is an infinitely complex living organism that science may never fully understand. But meaningful connections between what people see and how they use those images arise when mental processing is viewed as a human rather than a mechanical process.

DISCUSSION AND EXERCISE IDEAS

- Show a small, cropped portion of an image and lead a discussion about it. Now reveal the entire image and talk about the differences in meaning and content between the two views.
- Select any photograph and isolate all of the iconic, indexical, and symbolic signs you can find.
- Pick an advertising image out of a magazine and discuss the ad's content in terms of semiotics codes.
- Bring to class a copy of a visual symbol that has special significance for you. Share your picture in small groups and then with the entire class.
- Think of all the ways you might be distracted from seeing anything clearly.



INFOTRAC COLLEGE EDITION ASSIGNMENTS

- With "Subject guide" checked, type "Gestalt Principles" in the search area and read of the experiment using gestalt principles to improve memory by David S. Wallace, et al. Try to replicate the experiment with other students in your class or come up with your own ideas of using gestalt principles to improve a person's memory.